

HOMECOMING Native sauger (top) and pallid sturgeon (left) are migrating upstream past 12-Mile Dam on the Tongue River this spring thanks to a new fish passageway built around the 123-year-old structure. Below: Governor Brian Schweitzer helps open the headgates at a ceremony in September 2007.



CLOCKWISE FROM TOP: BILL LINDNER/PHOTOGRAPHY; THE NATURE CONSERVANCY; ANDREW MCKEAN/MONTANA FWP

BYPASSING THE BARRIER

For the first time since Grover Cleveland was president, saugers, sturgeon, and other fish species are swimming up the Tongue River past 12-Mile Diversion Dam.

BY
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Consider it a homecoming. This spring, for the first time since the late 1800s, saugers, suckers, channel catfish, pallid sturgeon, and other fish species are migrating from the Yellowstone River up the Tongue River past a dam to spawning waters far upstream. The fish are able to circumvent 12-Mile Dam and swim an additional 50 miles thanks to a recently constructed 760-foot-long, rock-lined side channel, called the Muggli Fish Passage. Two headgates control water flow into the passage, completed in September 2007. “Within 15 minutes of first opening the headgates, we saw fish moving up the passage,” says Burt Williams, Yellowstone River Project manager with The Nature Conservancy, a partner in the project. That movement to upstream spawning habitat could be critical to the survival of fish such as the blue sucker, whose population has declined over the past decades. “In the big picture, this bypass will improve the long-term survival of several species that otherwise might be in real trouble,” says Brad Schmitz, regional fisheries manager for Montana Fish, Wildlife & Parks in Miles City.

The Tongue River gurgles to life in the Bighorn Mountains of Wyoming before traveling northeast into Montana and feeding the Yellowstone River at Miles

City. Along the way, it becomes an important recreational resource in water-deprived south-central Montana. Tongue River Reservoir, an impoundment of the river just north of the Wyoming border, is a popular warmwater fishery that also attracts boaters and waterskiers. As the river continues downstream from the reservoir, it provides water needed for both irrigation and fish survival.

The headgates to the Muggli Fish Passage will remain open for most of the year, allowing for fish movement. If river flows drop too low at 12-Mile Dam during the irrigation season, the headgates will close to provide the local irrigation district with its legal water allotment. But when the district does not need all of its water, such as during the spring spawning run, it has agreed to allow the remainder to flow around the dam down the new side channel. “This passageway and how it has been negotiated with the irrigators shows that these rivers can sustain multiple use,” says Schmitz. “We can get water for irrigation and have healthy ecosystems at the same time. The two aren’t mutually exclusive.”

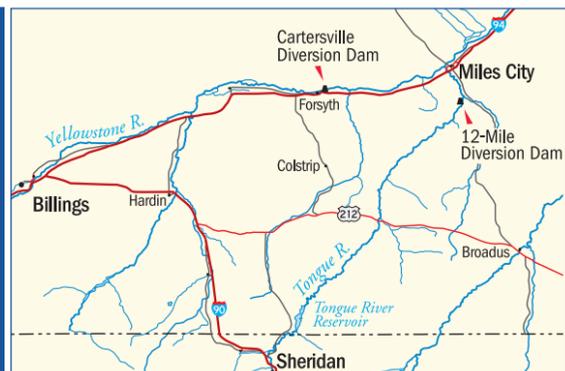
That’s key, because the Muggli Fish Passage could lead the way for eventual re-engineering of other irrigation diversion dams along the Yellowstone River. Such cooperative projects among irrigation districts, state and

federal agencies, and conservation groups could reopen long-blocked river migration routes for species such as the federally endangered pallid sturgeon and state “species of special concern” like the paddlefish.

Diversion dams divert portions of river flow into a series of canals used to irrigate crop fields. Though essential for farmers and ranchers, the dams can harm fish populations. Many river species need to travel great distances to use spawning, feeding, and wintering habitats. Since construction of 12-Mile Dam in 1885, for example, the number of species upstream from the structure has dwindled to 20, compared to more than 40 downstream.

In the 1960s and ’70s, sauger runs up the Tongue were strong, but the fish stacked up behind the dam, blocked from going any farther. That run has since dwindled, prompting Schmitz and other biologists to wonder if those river-running sauger may have lost the instinct to migrate up the Tongue. “We’re not sure if the Tongue River sauger adapted or changed their habits, or if

BLOCKED RUNS Tributaries to the Yellowstone are essential breeding waters for many fish species. Before construction of diversion dams, fish could move up and down the Yellowstone and tributaries to spawning and wintering habitats. Those historic routes, some blocked for decades, are now being restored.



Twelve years after being elected irrigation district secretary-manager in 1987, Muggli installed a screening device that greatly reduced fish entrainment. But an even greater goal was to build a passageway so fish could bypass the dam on their way upstream. Muggli mobilized a coalition of public agencies and conservation groups to raise funds and obtain the necessary permitting and agreements. The T&Y Irrigation District provided land and donated time and equipment.

Schmitz says success of the Muggli Fish

ects on the Yellowstone River. The biggest one is at Intake Dam east of Glendive, where an estimated 1 million fish each year are entrained in the canal system emanating from the dam. Operated by the Bureau of Reclamation (BOR), the dam is also considered a major barrier to spawning pallid sturgeon, one of the country’s most endangered fish species. Last November, the U.S. Army Corps of Engineers received congressional authority to help build a fish screen and a passageway similar to those at 12-Mile Dam. Brent Esplin of the BOR says the growing momentum at Intake and 12-Mile has led to plans by agencies and the local irrigation district to build a fish bypass at Cartersville Diversion Dam at Forsyth. “Folks will first want to see how Intake works out and if it meets the needs of irrigators and aquatic species,” he says. “But it makes sense to do the next project at the next dam upstream from Intake.”

Muggli says he is gratified knowing his work at 12-Mile may be inspiring other irrigation districts to work with public agencies and conservation organizations. “We as irrigators need to look out for other water users,” he says. “The less intrusive we can be on the resource, the better. There’s no reason anyone should drain a river. We need to figure out how to conserve water so we’ve got it for other beneficial uses.”

Muggli finally solved the water allocation problem on the Tongue River. But he says the effort took nearly 40 years and required more meetings, paperwork, and sheer bullheadedness on his part than he ever dreamed possible. “I never thought it would take this damn long to get a passageway built,” he says. “But I knew that someday, if I lived long enough, we’d get it done.” 🐻

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we’ve lost those runs entirely,” says Schmitz.

The new fish passageway is the first of its kind built on a Yellowstone River tributary. It is named after Roger Muggli, a local farmer and secretary-manager of the Tongue and Yellowstone (T&Y) Irrigation District. Muggli, whose father and grandfather had previously held the post, says that even as a boy he could see that the diversion dam blocked fish from moving upstream. It also siphoned off, or “entrained,” downstream-running fish into irrigation canals. “A lot of us around here benefit from this diversion dam, and I think we have an obligation to fix it so it’s not so hard on the fish,” Muggli says.

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Passage is making additional work on the Tongue River possible. FWP has begun removing two diversion dams upstream from 12-Mile—the SH Diversion and the Mobley Diversion—which will give fish access to another 140 miles of river up to Tongue River Reservoir. The two small dams are no longer needed because local ranchers now use pumps to draw river water for irrigation. “That’s an awful lot of habitat we’ll be opening up,” Schmitz says. “It’s not often that a fisheries biologist gets to be a part of something like this. In terms of making an improvement to a fishery, the new passageway and the dam removals are monumental.”

The Tongue River projects are also adding momentum to similar fish movement proj-



FISH ADVOCATE Farmer and irrigation district secretary-manager Roger Muggli of Miles City (above, next to the passageway) vowed he would find a way for fish to circumvent the diversion dam (top) his family has managed for three generations. After waters were released into the 760-foot passageway (right), fish immediately began moving upstream. The progress at 12-Mile Dam has inspired plans for fish passageways on the Yellowstone River at Cartersville Diversion Dam (below) and others.

